



# **A short history of ebooks**

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## 1. Project Gutenberg, a visionary project

Project Gutenberg is 50 years old. The first ebook was available in July 1971, as eText #1 of Project Gutenberg, a visionary project launched by Michael Hart to create free electronic versions of literary works and disseminate them worldwide. With the invention of the printer in the 15th century, Johannes Gutenberg allowed anyone to have printed books for a (relatively) small cost. With the invention of the internet in the 20th century, Project Gutenberg would allow anyone to have a digital library at no cost. Project Gutenberg has offered more than 65,000 ebooks in more than 60 languages in July 2021, with tens of thousands of downloads per day.

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### # Beginning

As recalled by Michael Hart in January 2009 in an email interview: "On July 4, 1971, while still a freshman at the University of Illinois (UI), I decided to spend the night at the Xerox Sigma V mainframe at the UI Materials Research Lab, rather than walk miles home in the summer heat, only to come back hours later to start another day of school. I stopped on the way to do a little grocery shopping to get through the night, and day, and along with the groceries they put in the faux parchment copy of 'The US Declaration of Independence' that became quite literally the cornerstone of Project Gutenberg.

"That night, as it turned out, I received my first computer account -- I had been hitchhiking on my brother's best friend's name, who ran the computer on the night shift. When I got a first look at the huge amount of computer money I was given, I decided I had to do something extremely worthwhile to do justice to what I had been given. (...) As I emptied out groceries, the faux parchment 'Declaration of Independence' fell out, and the light literally went on over my head like in the cartoons and comics... I knew what the future of computing, and the internet, was going to be... 'The Information Age.' The rest, as they say, is history."

Michael Hart keyed in the "US Declaration of Independence" in upper case because there was no lower case yet. He mentioned where the 5 K file was stored to the 100 users of the pre-internet. The file was downloaded by six users.

Michael Hart decided to search the books from public domain available in libraries, to digitise these books and to store their electronic versions. Project Gutenberg's mission would be to put at everyone's disposal, in electronic versions, as many literary works from public domain as possible for free.

First considered as totally unrealistic, the project got its first boost with the invention of the web in 1991, which made it easier to distribute ebooks and recruit volunteers.

Years later, in August 1998, Michael Hart wrote in an email interview: "We consider etext to be a new medium, with no real relationship to paper, other than presenting the same material, but I don't see how paper can possibly compete once people each find their own comfortable way to etexts, especially in schools."

A book became a continuous text file instead of a set of pages, using the low set of ASCII, named Plain Vanilla ASCII, with caps for the terms in italic, bold or underlined of the printed edition, for it to be read on any hardware and software. As a text file, such a book could be easily copied, indexed, searched, analysed and compared with other books. Much later, ASCII was replaced by Unicode to be able to process books in many languages.

## # Distributed Proofreaders

The project got a new boost with the creation of Distributed Proofreaders in 2000, to share the proofreading of ebooks between many volunteers.

Distributed Proofreaders was launched in October 2000 by Charles Franks to support the digitisation of public domain books, and to assist Project Gutenberg in its task. The books are scanned from a printed edition and converted into text by using OCR (Optical Character Recognition), 99% reliable at the best, which leaves a few errors per page. Volunteers choose one of the books available on the site and proofread one page or a few pages. It is recommended they do a page per day if possible.

Distributed Proofreaders became the main source of Project Gutenberg ebooks, an official Project Gutenberg site in 2002, and a separate entity in May 2006 with the creation of the Distributed Proofreaders Foundation.

10,000 books were digitised, proofread and "preserved for the world" in December 2006, and 20,000 ebooks in April 2011, as "unique titles [sent] to the bookshelves of Project Gutenberg, free to enjoy for everybody. (...) Distributed Proofreaders is a truly international community. People from over the world contribute." Distributed Proofreaders Europe (DP Europe) began production in early 2004. Distributed Proofreaders Canada (DP Canada) began production in December 2007.

## # "Less is more"

Project Gutenberg keeps its administrative and financial structure to the bare minimum. Its motto fits into three words: "Less is more." The minimal rules give much space to volunteers and to new ideas. Its goal is to ensure its independence from loans and other funding and from ephemeral cultural priorities, in order to avoid pressure from politicians and others. Another goal is to ensure respect for the volunteers, who can be confident that their work will be used not just for years but for generations. Volunteers can network through mailing lists, weekly or monthly newsletters, discussion lists, forums, wikis and blogs.

40 years after the beginning of Project Gutenberg and shortly before his death in September 2011, Michael Hart described himself as a workaholic who devoted his entire life to his project. He considered himself a pragmatic and farsighted altruist. After being regarded as an eccentric for years, he was now respected.

Michael Hart often stated in his writings that, while Johannes Gutenberg allowed anyone to have its own printed books for a (relatively) small cost, Project Gutenberg would allow anyone to have a digital library at no cost stored in a pocket device.

The collection of Project Gutenberg has the size of a local public library, available on the web to be downloaded for free. The free ebooks can be used and copied endlessly. Reading and culture are available for everyone at no cost.

Under the leadership of Greg Newby, its CEO, Project Gutenberg celebrated its 50th anniversary on 4 July 2021 with more than 65,000 ebooks available in more than 60 languages and dialects, and tens of thousands of downloads per day.

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## 2. The milestones of Project Gutenberg

"We consider etext to be a new medium, with no real relationship to paper, other than presenting the same material, but I don't see how paper can possibly compete once people each find their own comfortable way to etexts, especially in schools." (Michael Hart, founder of Project Gutenberg and inventor of ebooks, August 1998)

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[year-month]

1971-07 > Michael Hart keys in "The United States Declaration of Independence" (eBook #1) on 4 July 1971 and sends a message to the 100 users of the pre-internet. Six users retrieve the file. Project Gutenberg is born.

1972 > He keys in "The United States Bill of Rights" (eBook #2).

1973 > He keys in "The United States Constitution" (eBook #5).

1974 > The internet takes off.

1974 to 1988 > Michael Hart keys in parts of the Bible and several works of Shakespeare, first alone and then with a few volunteers.

1989-08 > eBook #10 is "The King James Bible".

1991-01 > eBook #11 is "Alice's Adventures in Wonderland", by Lewis Carroll.

1991-06 > eBook #16 is "Peter Pan", by J. M. Barrie.

1991 > The web takes off, and will make it easier to distribute free ebooks and recruit volunteers.

1991 > Digitisation (keying in) of one book per month.

1992 > Digitisation of two books per month.

1993-12 > Creation of three main sections: Light Literature, Heavy Literature, Reference Literature.

1993 > Digitisation of four books per month.

1994-01 > eBook #100 is "The Complete Works of William Shakespeare".

1994 > Digitisation of eight books per month.

1995 > Digitisation of 16 books per month.

1996 & 1997 > Digitisation of 32 books per month.

1997-08 > eBook #1000 is "La Divina Commedia di Dante", in Italian.

1997 > Creation of the Project Gutenberg Consortia Center (PGCC).

1998 to 2000 > Digitisation of 36 books per month.

1999-05 > eBook #2000 is "Don Quijote", by Cervantès, in Spanish.

2000 > Creation of the Project Gutenberg Literary Archive Foundation (PGLAF).

2000-10 > Charles Franks creates Distributed Proofreaders (DP) to support the digitisation of public domain books and assist Project Gutenberg (PG).

2000-12 > eBook #3000 is the 3rd volume of "À l'ombre des jeunes filles en fleurs", by Marcel Proust, in French.

2001-08 > Creation of Project Gutenberg of Australia.

2001-10 > eBook #4000 is "The French Immortals Series", in English.

2001 > Digitisation (OCR scanning and proofreading by volunteers) of 104 books per month.

2001 > Distributed Proofreaders becomes the main source of Project Gutenberg ebooks.

2002-04 > eBook #5000 is "The Notebooks of Leonardo da Vinci", in English.

2002 > Digitisation of 203 books per month.

2002 > Distributed Proofreaders becomes an official Project Gutenberg site.

2003-08 > Best of Gutenberg CD with 600 ebooks.

2003-09 > Creation of the section Project Gutenberg Audio eBooks.

2003-10 > The number of Project Gutenberg ebooks doubles in 18 months, going from 5,000 to 10,000.

2003-10 > eBook #10000 is "The Magna Carta".

2003-12 > First Project Gutenberg DVD with 9,400 books (most of the collection).



2003-12 > Creation of Distributed Proofreaders Europe by Project Rastko.

2003 > Digitisation of 348 books per month.

2003 > The Project Gutenberg Consortia Center (PGCC) becomes an official Project Gutenberg site.

2004-01 > Creation of Project Gutenberg Europe by Project Rastko.

2004-02 > Michael Hart travels to Europe to promote Project Gutenberg, first at the UNESCO headquarters in Paris, France, second at the European Parliament in Brussels, Belgium, and third at the headquarters of Project Rastko in Belgrade, Serbia.

2004-10 > 5,000 ebooks digitised by Distributed Proofreaders.

2004 > Digitisation of 338 books per month.

2005-01 > eBook #15000 is "The Life of Reason", by George Santayana.

2005-05 > 7,000 ebooks digitised by Distributed Proofreaders.

2005-05 > First 100 ebooks digitised by Distributed Proofreaders Europe.

2005-06 > 16,000 ebooks in Project Gutenberg.

2005-06 > First 100 ebooks in Project Gutenberg Europe.

2005-07 > 500 ebooks in Project Gutenberg of Australia.

2005-10 > 5th anniversary of Distributed Proofreaders.

2005 > Digitisation of 252 books per month.

2006-01 > Creation of Project Gutenberg PrePrints.

2006-02 > 8,000 ebooks digitised by Distributed Proofreaders.

2006-05 > Creation of the Distributed Proofreaders Foundation.

2006-07 > New Project Gutenberg DVD with 17,000 ebooks.

2006-12 > 20,000 ebooks in Project Gutenberg.

2006-12 > 400 ebooks digitised by Distributed Proofreaders Europe.

2006 > Digitisation of 345 books per month.

2007-03 > 10,000 ebooks digitised by Distributed Proofreaders.

2007-04 > 1,500 books in Project Gutenberg of Australia.

2007-07 > Creation of Project Gutenberg Canada (PGC).

2007-12 > Creation of Distributed Proofreaders of Canada (DPC).

2007 > Digitisation of 338 books per month.

2008-03 > 100 ebooks in Project Gutenberg of Canada.

2008-04 > 25,000 ebooks in Project Gutenberg.

2008-04 > eBook #25000 is "English Book Collectors", by William Younger Fletcher.

2008-05 > 500 ebooks in Project Gutenberg Europe.

2010-10 > 10th anniversary of Distributed Proofreaders with 18,000 ebooks digitised.

2011-07 > 40th anniversary of Project Gutenberg with 36,000 ebooks.

2011-09 > Michael Hart dies in Illinois at age 64 after spending his whole life advocating for his project.

2015-07 > 30,000 ebooks digitised by Distributed Proofreaders.

2015-09 > eBook #50000 is "John Gutenberg, First Master Printer", by Franz von Dingelstedt.

2020-10 > 20th anniversary of Distributed Proofreaders with around 40,000 ebooks digitised.

2021-07 > 50th anniversary of Project Gutenberg on 4 July 2021 with more than 65,000 ebooks in more than 60 languages and dialects, and tens of thousands of downloads per day.

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### 3. PDF, a pioneer format created by Adobe

From California, Adobe created the PDF (Portable Document Format) in June 1993, along with Acrobat Reader (free, to read PDFs) and Adobe Acrobat (for a fee, to make PDFs). According to the website of Adobe, PDF "lets you capture and view robust information from any application, on any computer system and share it with anyone around the world. Individuals, businesses, and government agencies everywhere trust and rely on Adobe PDF to communicate their ideas and vision."

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#### # Two new software

PDF was perfected over the years as a global standard for distribution and viewing of information. Acrobat Reader and Adobe Acrobat gave the tools to create and view PDF files in several languages and for several platforms (Windows, Mac, Linux).

In August 2000, Adobe partnered with Amazon.com and Barnes & Noble.com for them to offer ebooks for Acrobat Reader in their new eBookStores.

In January 2001, Adobe launched Acrobat eBook Reader (free) and the Adobe Content Server (for a fee).

Acrobat eBook Reader was meant to read PDF files of copyrighted books, while adding notes and bookmarks, visualising the book covers in a personal library, and browsing a dictionary.

The Adobe Content Server was intended for publishers and distributors, for the packaging, protection, distribution and sale of PDF copyrighted books, while managing their DRM (Digital Rights Management) access according to the copyright holder's instructions, for example to allow or not the printing or the loan of a book. The Adobe Content Server was replaced with the Adobe LiveCycle Policy Server in November 2004.

In April 2001, Adobe partnered with Amazon to include 2,000 copyrighted books for Acrobat eBook Reader in its eBookStore. These were titles of major publishers, travel guides and children books.

Acrobat Reader was available for the Palm Pilot (the PDA of Palm) in May 2001 and for the Pocket PC (the PDA of Microsoft) in December 2001.

## # Adobe Reader

From 1993 to 2003, over 500 million copies of Acrobat Reader were downloaded worldwide, according to the website of Adobe.

In 2003, Acrobat Reader was available in many languages and for many platforms (Windows, Mac, Linux, Palm OS, Pocket PC, Symbian OS, etc.). Approximately 10% of documents available on the internet were PDF files. PDF was also the main format for ebooks.

In May 2003, Acrobat Reader (5th version) merged with Acrobat eBook Reader (2nd version) to become Adobe Reader, starting with version 6, which could deal with both standard PDF files and secure PDF files of copyrighted books.

In late 2003, Adobe opened its own online bookstore, the Digital Media Store, with PDF titles from major publishers, for example HarperCollins, Random House and Simon & Schuster, and electronic versions of newspapers and journals, for example The New York Times or Popular Science.

Adobe added Adobe eBooks Central as a service to read, publish, sell and lend ebooks, and Adobe eBook Library as a prototype digital library.

After being a proprietary format, PDF was officially released as an open standard in July 2008, and published by the International Organization for Standardization (ISO) as ISO 32000-1:2008.

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## 4. Gabriel, a portal for European national libraries

Gabriel -- an acronym for "Gateway and Bridge to Europe's National Libraries" -- was created in January 1997 as a common portal giving access to the internet services of the participating libraries, with 38 participating national libraries in 1998. Gabriel merged in summer 2005 with the European Library's website to offer a common portal for the 43 European national libraries.

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### # Why this name Gabriel?

As stated on its website, "Gabriel also recalls Gabriel Naudé, whose 'Advis pour dresser une bibliothèque' (Paris, 1627) is one of the earliest theoretical works about libraries in any European language and provides a blueprint for the great modern research library. The name Gabriel is common to many European languages and is derived from the Old Testament, where Gabriel appears as one of the archangels or heavenly messengers. He also appears in a similar role in the New Testament and the Qu'ran."

### # How did Gabriel begin?

During the 1994 annual meeting of CENL (Conference of European National Librarians) in Oslo, Norway, it was suggested that national libraries could set up a common electronic board with updates about their internet projects.

Representatives from the national libraries in the Netherlands (Koninklijke Bibliotheek), United Kingdom (British Library) and Finland (Helsinki University Library) met in March 1995 in The Hague, Netherlands, to launch the pilot Gabriel project. They were joined by the national libraries in Germany (Deutsche Bibliothek), France (Bibliothèque Nationale de France) and Poland (Biblioteka Narodowa). Gabriel would describe their services and collections, while seeking to attract other national libraries into the project.

The original website was launched in September 1995. It was maintained by the British Library Network Services, and mirrored on the servers of the national libraries in the Netherlands and Finland. In November 1995, other national libraries were invited to submit entries describing their services and collections after the creation of their own websites and online catalogues.

## # An official CENL website

During the 1996 CENL annual meeting in Lisbon, Portugal, it was decided that Gabriel would become an official CENL website in January 1997.

The new trilingual (English, French, German) Gabriel portal was maintained by the national library in the Netherlands (Koninklijke Bibliotheek), and mirrored on the servers of four other national libraries, in the United Kingdom, Finland, Germany and Slovenia.

In 1998, Gabriel offered links to the internet services of 38 participating national libraries (Albania, Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Malta, Netherlands, Norway, Poland, Portugal, Romania, Russia, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, Vatican City).

These links led to OPACs (Open Public Access Catalogues), national bibliographies, national union catalogues, indexes for periodicals, web servers and gopher. There was a whole section for common European projects.

Gabriel merged in summer 2005 with the European Library's website (created by CENL in January 2004) to offer a common portal for the 43 European national libraries. Europeana, the European digital library, was created three years later, in November 2008. Europeana offered 2 million documents in November 2008, 6 million documents in March 2010, and 10 million documents on a revamped website in September 2010.

## # What about public libraries?

The Helsinki Public Library in Finland was the first library to launch a website in February 1994. Four years later, the document "Internet and the Library Sphere" published in December 1998 by the European Commission mentioned websites for around 1,000 public libraries from 26 European countries.

The leading countries were Finland (247 libraries), Sweden (132 libraries), the United Kingdom (112 libraries), Denmark (107 libraries), Germany (102 libraries), the Netherlands (72 libraries), Lithuania (51 libraries), Spain (56 libraries) and Norway (45 libraries). Russia had a common website for 26 reference libraries. Newcomers were the Czech Republic (29 libraries) and Portugal (3 libraries).

The websites ranged from one web page with the postal address and opening hours of the library to a full website with access to the online catalogue of the library.

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## 5. The British Library and its treasures

"The development of the Digital Library [in 1999] will enable the British Library to embrace the digital information age. Digital technology will be used to preserve and extend the Library's unparalleled collection. Access to the collection will become boundless with users from all over the world, at any time, having simple, fast access to digitised materials using computer networks, particularly the internet." (Brian Lang, chief executive of the British Library, 1997)

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### # The Digital Library Programme

In "Information Systems Strategy", a document available in 1997 on the website of the British Library, Brian Lang explained: "We do not envisage an exclusively digital library. We are aware that some people feel that digital materials will predominate in libraries of the future. Others anticipate that the impact will be slight. In the context of the British Library, printed books, manuscripts, maps, music, sound recordings and all the other existing materials in the collection will always retain their central importance, and we are committed to continuing to provide, and to improve, access to these in our reading rooms. The importance of digital materials will, however, increase. We recognise that network infrastructure is at present most strongly developed in the higher education sector, but there are signs that similar facilities will also be available elsewhere, particularly in the industrial and commercial sector, and for public libraries. Our vision of network access encompasses all these."

### # The Electronic Beowulf Project

The British Library began to offer digitised versions of its treasures, for example Beowulf, the earliest known narrative poem in English and one of the most famous works of Anglo-Saxon poetry.

The British Library holds the only known manuscript of Beowulf, dated circa 1000. The poem itself is much older than the manuscript. Some historians believe it might have been written circa 750. The manuscript was badly damaged by fire in 1731. 18th-century transcripts mentioned hundreds of words and characters which were then visible along the charred edges, and which crumbled away over the years. To halt this process, each leaf was mounted on a paper frame in 1845.

As explained on its website, scholarly discussions on the date of creation and provenance of the poem continued around the world, and researchers regularly required access to the manuscript. Taking Beowulf out of its display case for study not only raised conservation

issues, it also made it unavailable for the many visitors who were coming to the British Library expecting to see this literary treasure on display. The digitisation of the manuscript offered a solution to these problems, and provided new opportunities for researchers and readers worldwide.

The Electronic Beowulf Project was launched as a database of the digitised images of the Beowulf manuscript. In 1998, the database included (a) the fiberoptic readings of hidden characters and ultra-violet readings of erased text in the manuscript, (b) the full digital facsimiles of the 18th-century transcripts of the manuscript, and (c) selections from the main 19th-century collations, editions and translations. In 1999, there were (d) images of other manuscripts from the same period, (e) links to the "Toronto Dictionary of Old English Project", and (f) links to the comprehensive Anglo-Saxon bibliographies of the "Old English Newsletter".

The database was developed in partnership with two leading experts in the United States, Kevin Kiernan, from the University of Kentucky, and Paul Szarmach, from the Medieval Institute of Western Michigan University. Kevin Kiernan edited the electronic archive and supervised the making of a CD-ROM with the main electronic images.

Brian Lang explained on the website of the British Library: "The Beowulf manuscript is a unique treasure and imposes on the Library a responsibility to scholars throughout the world. Digital photography offered for the first time the possibility of recording text concealed by early repairs, and a less expensive and safer way of recording readings under special light conditions. It also offers the prospect of using image enhancement technology to settle doubtful readings in the text.

"Network technology has facilitated direct collaboration with American scholars and makes it possible for scholars around the world to share in these discoveries. Curatorial and computing staff learned a great deal which will inform any future programmes of digitisation and network service provision the Library may undertake, and our publishing department is considering the publication of an electronic scholarly edition of Beowulf.

"This work has not only advanced scholarship; it has also captured the imagination of a wider public, engaging people (through press reports and the availability over computer networks of selected images and text) in the appreciation of one of the primary artefacts of our shared cultural heritage."

## # Other treasures of the British Library

Other digitised treasures of the British Library were available online as well, for example (a) "Magna Carta", the first English constitutional text, signed in 1215, with the Great Seal of King John; (b) the "Lindisfarne Gospels", dated 698; (c) the "Diamond Sutra", dated 868, sometimes referred to as the world's earliest printed book; (d) the "Sforza Hours", a Renaissance treasure dated 1490-1520; (e) the "Codex Arundel", with notes by Leonardo Da Vinci from 1478 to 1518; and (f) the "Tyndale New Testament", the first English translation of the New Testament by William Tyndale, printed by Peter Schöffer in 1526.



In November 2000, the website of the British Library offered a digitised version of the original Gutenberg Bible. Gutenberg printed its Bible in 1454 in Mainz, Germany, perhaps printing 180 copies, with 48 copies still available in 2000, with two full copies and one partial one at the British Library. A little different from each other, the two full copies were digitised in March 2000 by Japanese experts from Keio University of Tokyo and NTT (Nippon Telegraph and Telephone Communications). The images were then processed to offer a beautiful digitised version available online eight months later for the world to enjoy.

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## 6. From PDAs to smartphones

In April 2001, there were 17 million PDAs and 100,000 e-book readers worldwide, according to a Seybold Report. The main PDAs were the Palm Pilot (Palm) and the Pocket PC (Microsoft). In 2004, the prices of PDAs began to drop, with the leaders still being Palm and Microsoft, joined by Sony and Hewlett-Packard. People began buying smartphones instead of PDAs. The first smartphone was Nokia 9210, launched in 2001 with a Symbian platform, long before the iPhone of Apple launched in June 2007.

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### # The Palm Pilot (Palm)

The Palm Pilot was launched by Palm in March 1996. 23 million Palm Pilots were sold between 1996 and 2002. The software used to read ebooks was Palm Reader, available for computers too in July 2002. The bookstore Palm Digital Media (later renamed Palm eBook Store) offered 5,500 ebooks in 2002, and 10,000 ebooks in several languages in 2003.

### # The eBookMan (Franklin)

The eBookMan was a multimedia PDA launched by Franklin in October 2000. The software used to read ebooks was Franklin Reader. The same month, the eBookMan received the eBook Technology Award at the International Book Fair in Frankfurt, Germany. Three models (EBM-900, EBM-901, EBM-911) were available in early 2001, with a RAM size of 8 or 16 MB, and a large, black LCD screen (backlit or not). Users could listen to audiobooks and MP3 music files. The digital bookstore of Franklin included the 4,500 audiobooks of Audible.com. Mobipocket Reader was added to Franklin Reader in October 2001.

### # Other PDAs

36.8% of PDAs were Palm Pilots in 2002, despite a fierce competition from the Pocket PC (Microsoft) and from the PDAs of Sony, Hewlett-Packard, Handspring, Toshiba and Casio. The main platforms were Palm OS (for 55% of PDAs) and Pocket PC (for 25,7% of PDAs). The main software to read ebooks were Mobipocket Reader (March 2000), Microsoft Reader (April 2000), Palm Reader (March 2001), Acrobat Reader (May 2001 for Palm Pilot and December 2001 for Pocket PC), and Adobe Reader (May 2003), that replaced Acrobat Reader to read both standard PDF files and secure PDF files of copyrighted books.

Publishers were selling ebooks in various formats (LIT, PRC, PDF, OeB) on their own websites or in the digital bookstores of Amazon, Barnes & Noble, Palm, Mobipocket, Numilog, and more.

## # Smartphones

The prices of PDAs began to drop in 2004. The leaders were still Palm, Microsoft, Sony and Hewlett-Packard. People began buying smartphones instead of PDAs. Sony stopping selling PDAs in February 2005.

The first smartphone was Nokia 9210, launched in 2001 with a Symbian platform, and followed by Nokia Series 60, Sony Ericsson P800, and the smartphones of Motorola and Siemens. 3,7% of cellphones sold in 2004 were smartphones. 9% of cellphones sold in 2006 were smartphones, which meant 90 million smartphones for one billion cell phones. Apple launched the iPhone in the USA in June 2007, in Europe in late 2007, and in Asia in 2008.

Would people prefer to read on mobile handsets like the iPhone 3G (with its Stanza Reader) or the T-Mobile G1 (with Android and its reader), or would they prefer to use e-readers? Was there a market for both smartphones and e-readers?

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## 7. The first e-readers

How about a book-sized electronic device that could store many books at once? The first e-readers were the Rocket eBook (NuvoMedia) and the SoftBook Reader (Softbook Press) in 1998, the Gemstar eBook (Gemstar) in November 2000. They were replaced by new e-readers with E Ink displays, for example the LIBRIe (Sony) in April 2004, the Cybook Gen2 (Bookeen) in June 2004, the Sony Reader (Sony) in September 2006, the Kindle (Amazon) in November 2007 and the Nook (Barnes & Noble) in November 2009.

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### # Rocket eBook (NuvoMedia)

The Rocket eBook was launched in 1998 by NuvoMedia, a company founded in 1997 in Silicon Valley. It was the size of a (large and thick) book, with a battery, a black and white LCD screen, and a storage capacity of ten books or so. Its investors were Barnes & Noble and Bertelsmann. NuvoMedia wanted to become "the electronic book distribution solution, by providing a networking infrastructure for publishers, retailers and end users to publish, distribute, purchase and read electronic content securely and efficiently on the internet". The Rocket eBook could connect to a computer (PC or Macintosh) through the Rocket eBook Cradle, a device with two cables, a cable for power through a wall transformer, and a serial cable for the computer.

### # SoftBook Reader (SoftBook Press)

SoftBook Press launched the SoftBook Reader the same year, from Silicon Valley, along with the SoftBook Network, described as "an internet-based content delivery service". The e-reader could connect to the internet directly with a built-in modem. Its investors were Random House and Simon & Schuster. With the SoftBook Reader, "people could easily, quickly and securely download a wide selection of books and periodicals using its built-in internet connection." The e-reader, "unlike a computer, was ergonomically designed for the reading of long documents and books." But ebooks were scarce at the time. Publishers were just beginning to digitise their own books, and were still wondering how to market them.

### # Other e-readers

The EveryBook Reader (EveryBook) and the Millennium eBook (Librius) were launched in 1999. The EveryBook Reader was "a living library in a single book", with a "hidden" modem to dial into the EveryBook Store, for people "to browse, purchase, and receive full text books, magazines, and sheet music". The Millennium eBook was a "small low-cost" e-reader

launched by Librius, a "full service e-commerce company". The World Bookstore of Librius "delivered digital copies of thousands of books" via the internet.

All these e-readers didn't last long. They were replaced by the Gemstar eBook (Gemstar) in the US in 2000, and the Cybook (Cytale and Bookeen) in Europe in 2001.

## # Gemstar eBook (Gemstar)

Gemstar bought the companies Nuvomedia (Rocket eBook) and SoftBook Press (SoftBook Reader) in January 2000, and launched the Gemstar eBook in the US and in Europe in November 2000. The black-and-white screen REB 1100 (successor of the Rocket eBook) and the colour-screen REB 1200 (successor of the SoftBook Reader) were both produced under the RCA label (Thomson Multimedia). They were replaced by GEB 1150 and GEB 2150 in autumn 2002, produced by Gemstar instead of RCA. But sales were far below expectations. Gemstar stopped selling e-readers in June 2003, and e-books the following month.

## # Cybook (Cytale and Bookeen)

The first European e-reader was developed by Cytale, a French company created by Olivier Pujol. Launched in January 2001, the Cybook (21 x 16 cm, 1 kilo, 32 M of SDRAM, 16 M of flash memory) could store 15.000 pages, or 30 books of 500 pages. But, once again, sales were far below expectations. Cytale closed its doors in July 2002. Bookeen was created in 2003 by Michael Dahan and Laurent Picard, two former engineers from Cytale. The Cybook 2G (2nd generation) was available in June 2004. The Cybook Gen3 (3rd generation) was available in July 2007, with a screen using the E Ink technology.

## # LIBRIe and Sony Reader (Sony)

Sony launched the LIBRIe 1000-EP in Japan in April 2004, in partnership with Philips and E Ink. Librié was the first e-reader to use a 6-inch E Ink screen, with a 10 M memory, and a 500-ebook storage capacity. eBooks were downloaded from a computer with a USB cable.

The Sony Reader was launched in October 2006 in the US. The E Ink screen gave "an excellent reading experience very close to that of real paper, making it very easy going on the eyes" (Michael Cook, editor of epubBooks.com). Another major feature was its battery life, with over 7,000 pages turns, and or up to two weeks of power, on just one battery charge. It was also the first e-reader to use Adobe Digital Editions. It was then launched in Canada, United Kingdom, Germany and France.

## # Kindle (Amazon)

Amazon launched the Kindle in November 2007, with a 6-inch E Ink display, page-turning buttons, and a storage capacity of 200 ebooks. eBooks could be downloaded via the 3G wireless connection, with no need for a computer (unlike the Sony Reader). A thinner Kindle 2 was launched in February 2009, with a storage capacity of 1,500 ebooks and a new text-

to-speech feature. The Kindle DX was launched in May 2009 with a larger 9.7-inch screen for newspapers and magazines.

## # Nook (Barnes & Noble)

Barnes & Noble launched the Nook in November 2009 with an Android platform, a 6-inch E Ink display, WiFi and 3G. A WiFi-only Nook was available in June 2010. The Nook Color was launched in October 2010, with a larger 7-inch LCD display for the viewing of magazines and picture books. The website of Barnes & Noble offered 2 million ebooks in November 2010. A lighter Nook with a 6-inch E Ink tactile display was launched in May 2011.

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People could also read on tablets. Apple launched the iPad in the US in April 2010, with an iBookstore of 60,000 ebooks. The iPad was available in Europe in June 2010. After the iPod (October 2001) and the iPhone (January 2007), two cult devices for a whole generation, Apple became a key player for ebooks. The iPad 2 was launched in March 2011 in the US and two weeks later internationally.

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## 8. E Ink, an electronic ink technology

In April 1997, researchers at the MIT Media Lab (MIT: Massachusetts Institute of Technology) founded the company E Ink to develop an electronic ink technology. A few years later, an E Ink screen for e-readers gave “an excellent reading experience very close to that of real paper, making it very easy going on the eyes” (Michael Cook, editor of epubBooks.com). Another display technology was the gyricon, developed since 1995 by PARC (Palo Alto Research Center), the Xerox center in Silicon Valley.

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### # E Ink

As explained on the website of E Ink: "Electronic ink is a proprietary material that is processed into a film for integration into electronic displays. Although revolutionary in concept, electronic ink is a straightforward fusion of chemistry, physics and electronics to create this new material.

“The principal components of electronic ink are millions of tiny microcapsules, about the diameter of a human hair. In one incarnation, each microcapsule contains positively charged white particles and negatively charged black particles suspended in a clear fluid. When a negative electric field is applied, the white particles move to the top of the microcapsule where they become visible to the user. This makes the surface appear white at that spot. At the same time, an opposite electric field pulls the black particles to the bottom of the microcapsules where they are hidden. By reversing this process, the black particles appear at the top of the capsule, which now makes the surface appear dark at that spot.

“To form an E Ink electronic display, the ink is printed onto a sheet of plastic film that is laminated to a layer of circuitry. The circuitry forms a pattern of pixels that can then be controlled by a display driver. These microcapsules are suspended in a liquid 'carrier medium' allowing them to be printed using existing screen printing processes onto virtually any surface, including glass, plastic, fabric and even paper. Ultimately electronic ink will permit most any surface to become a display, bringing information out of the confines of traditional devices and into the world around us.”

The prototype of the first E Ink screen was available in July 2002, and marketed in 2004 for several e-readers (LIBRIe, Sony Reader, Cybook, Kindle, Nook). Launched in April 2004 by Sony in Japan, the LIBRIe was the first e-reader with a 6-inch E Ink screen. Launched in October 2006 in the US, the Sony Reader had a E Ink screen that gave “an excellent reading experience very close to that of real paper, making it very easy going on the eyes” (Michael Cook, editor of epubBooks.com). The Cybook Gen3 (launched by Bookeen in July

2007), the Kindle (launched by Amazon in November 2007) and the Nook (launched by Barnes & Noble in November 2009) also had E Ink screens.

## # Gyricon

Another display technology was the Gyricon, developed since 1995 by PARC (Palo Alto Research Center), the Xerox center in Silicon Valley. In December 2000, some researchers at PARC founded the company Gyricon Media to market the SmartPaper, an electronic paper based on the gyricon technology.

Here is the technology behind the Gyricon, very briefly (and not so well) explained: in between two sheets of flexible plastic, millions of micro-cells contain two-tone (black and white) beads suspended in a clear liquid. Each bead has an electric charge. With an external electrical pulse, the balls rotate and change colour, to display, modify or delete data.

Gyricon Media began marketing commercial advertising in 2004, for example small posters running on batteries. The company ended its activities in 2005, and R&D went back in Xerox.

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## 9. Online dictionaries and encyclopedias

The first reference dictionaries and encyclopedias available on the web were the digital counterparts of their printed editions. The first online dictionaries were several dictionaries in Merriam-Webster Online, and the Oxford English Dictionary (OED). The first online encyclopedias were Britannica.com (the website of Encyclopaedia Britannica) and Encyclopaedia Universalis (its French counterpart). Later on, dictionaries and encyclopedias were created directly for the web, for example the GDT (Grand Dictionnaire Terminologique) from Quebec and WordReference.com for language dictionaries.

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### # First online dictionaries

Merriam-Webster created in 1996 the website "Merriam-Webster Online: The Language Center" to give free access to online resources stemming from its printed editions: Webster Dictionary, Webster Thesaurus, Webster's Third (a lexical landmark), Vocabulary Builder (with interactive vocabulary quizzes), the Guide to International Business Communications, and the Barnhart Dictionary Companion (hot new words). Its goal was also to help track down definitions, spellings, pronunciations, synonyms, vocabulary exercises, and other key facts about words and language.

The Oxford University Press (OUP) released the online version of the 20-volume Oxford English Dictionary (OED) in March 2000 by for a subscription fee. A quarterly update included around 1,000 new or revised entries.

Two years later, Oxford University Press (OUP) created Oxford Reference Online (ORO), a comprehensive encyclopedia designed directly for the web. Available for a subscription fee, its 60,000 web pages (with one million entries) were the equivalent of 100 print encyclopedias.

### # First online encyclopedias

Britannica.com was created in December 1999 as the digital equivalent of the 32 volumes of the Encyclopaedia Britannica (15th edition). The online version was free, as a complement to the print and CD-ROM versions for sale, with a selection of articles from 70 magazines, a guide to the best websites, a selection of books, etc., all searchable through a single search engine. In September 2000, the site was among the top 100 websites in the world. In July 2001, the website could be searched for a monthly or annual fee. In 2009, Britannica.com opened its website to external contributors.

Created in December 1999, the website of the Encyclopedia Universalis (the French counterpart of the Encyclopaedia Britannica) included 28,000 articles by 4,000 contributors, available for an annual subscription fee, with a number of articles available for free.

## # The GDT from Quebec

Created in September 2000 by OQLF (Office Québécois de la Langue Française - Quebecois Office of the French Language) as a free service, the GDT (Grand Dictionnaire Terminologique - Main Terminological Dictionary) is a large French-English online terminology dictionary which started with 3 million terms related to industry, science and commerce. The GDT was designed directly for the web with the help of Semantix, a company specialising in linguistic software.

The GDT was used 1.3 million times during the first month of its existence, with peaks of 60,000 visits per day, which certainly contributed to better translations. Then the database was maintained by Convera Canada, with 3.5 million visits per month in February 2003. A revamped version of the GDT went online in March 2003, with the database maintained by the OQLF itself, and the addition of Latin as a third language.

## # WordReference.com

Michael Kellogg created WordReference.com in 1999 to offer free bilingual language dictionaries as well as other linguistic tools and forums for linguists.

Michael Kellogg explained on its website: "I started this site as an effort to provide free online bilingual dictionaries and tools to the world. The site has grown gradually ever since to become one of the most used online dictionaries, and the top online dictionary for its language pairs of English-Spanish, English-French, English-Italian, Spanish-French, and Spanish-Portuguese. It is consistently ranked in the top 500 most visited websites in the world. I am proud of my history of innovation with dictionaries on the internet. Many of the features such as being able to click any word in a dictionary entry were first implemented by me.

"Today, I have three main goals with my website. First, continue to create free online bilingual dictionaries from English to many other languages. I strive to offer translations for \*all\* English words, terms, idioms, sayings, etc. Second, provide the world's best language forums; and third, continue to innovate to produce the best website and tools for the world."

For the English language, WordReference offered in 2010 an English monolingual dictionary, and dictionaries from English to other languages (Arabic, Chinese, Czech, French, Greek, Japanese, Korean, Polish, Portuguese, Romanian, Turkish), and vice versa. For the Spanish language, it offered a Spanish monolingual dictionary, a Spanish dictionary of synonyms, a Spanish-French dictionary and a Spanish-Portuguese dictionary. There was a monolingual dictionary for German, and another one for Russian. Conjugation tables were available for French, Italian and Spanish.

WordReference Mini was created as a miniature version of the site to be embedded into other sites, for example sites that taught languages online. A mobile version was available for dictionaries from English to French, English to Italian and English to Spanish, and vice versa, with other language pairs planned for later.

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## 10. Experiments by best-selling authors

In 2000, Stephen King was the first best-selling author to self-publish his epistolary novel “The Plant” in episodes on a dedicated website. The experience only lasted six months -- the number of payments was much lower than the number of downloads -- but it paved the way for a new economic model. Stephen King’s ebooks were then released with the help of his publisher. Other digital experiments were made by Frederick Forsyth in the United Kingdom, Arturo Pérez-Reverte in Spain, and Paolo Coelho in Brazil. They released their first ebooks with the help of their publishers.

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### # Stephen King

As a first step, Stephen King distributed his short story “Riding the Bullet” in March 2000 as an electronic file. The file was downloaded 400,000 times during the first 24 hours in the digital bookstores that were selling it for US\$2.50.

In the wake of the media buzz that followed, Stephen King created his own website in July 2000 to self-publish his epistolary novel “The Plant” in episodes. The chapters were available at regular intervals and could be downloaded in several formats (PDF, OeB, HTML, TXT) for US\$1 or US\$2 depending on their size . After the publication of the sixth chapter in December 2000, the author decided to stop the experiment. More and more readers were downloading the chapters without paying for them.

Stephen King continued his digital experiments in partnership with his publisher. In March 2001, his novel “Dreamcatcher” was the first to be released both as a printed book by Simon & Schuster and as an ebook in Palm Digital Media, the digital bookstore of Palm. In March 2002, his collection of short stories “Everything’s Eventual” was released as a printed book by Scribner, an imprint of Simon & Schuster, and as an ebook in Palm Digital Media, with an excerpt that could be freely downloaded.

### # Frederick Forsyth

In November 2000, the British master of thrillers Frederick Forsyth began a digital experiment with his short story “The Veteran” in partnership with the electronic publisher Online Originals. “The Veteran” was the first short story of “Quintet”, a collection of five short stories announced in the following order: “The Veteran”, “The Miracle”, “The Citizen”, “The Art of the Matter” and “Draco”.

Available in three formats to be read on Acrobat Reader, Microsoft Reader and Glassbook Reader, the short story was sold for 3.99 pounds (6.60 euros) on the website of Online Originals, and in several online bookstores in the United Kingdom (Alphabetstreet, BOL.com, WHSmith) and in the United States (Barnes & Noble, Contentville, Glassbook). But the experience was short lived because sales were far below expectations. "Quintet" was later published as a printed book.

## # Arturo Pérez-Reverte

The Spanish novelist Arturo Pérez-Reverte became famous with his series describing the adventures of Capitan Alatriste in the 17th century. The new title to be released in late 2000 was "El Oro del Rey" ("The King's Gold"). In November 2000, the author partnered with his publisher Alfaguara to publish the novel as a PDF for one month. The PDF could be downloaded from a web page created on the portal Inicia, before the release of the print edition in brick-and-mortar bookstores.

The PDF was available for 2.90 euros, a much cheaper price than the 15.10 euros of the printed book. One month later, there were 332,000 downloads, but only 12,000 readers who paid for them. Most readers shared their password with their family and their friends for them to download the book for free. The digital experiment stopped, but it was a good marketing campaign to launch the printed book.

## # Paulo Coelho

Paulo Coelho is a Brazilian novelist who became famous with his novel "The Alchemist". In early 2003, his books were translated into 56 languages, with 53 million copies sold in 155 countries. In March 2003, after his readers wrote him they had a hard time finding his books in some places and countries, Paulo Coelho decided to offer free PDF versions of several novels in various languages with the consent of his publishers. He renewed the same experiment with other titles in spring 2011.

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## 11. From OeB to EPUB as a standard format

With so many formats in 1998-2001, the digital publishing industry felt the need to work on a standard for ebooks. The first standard was the OeB (Open eBook), released by the Open eBook Forum (OeBF) in 1998. Most ebook formats then derived from the OeB format, for example LIT for Microsoft Reader and PRC for Mobipocket Reader. The Open eBook Forum (OeBF) was replaced by the International Digital Publishing Forum (IDPF) in 2005, et the OeB format was replaced with EPUB, an acronym for «Electronic PUBlication». EPUB2 was released in May 2010, and EPUB3 in October 2011.

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### # The Open eBook (OeB) format

On top of “classical” formats -- TXT (text), DOC (Microsoft Word), HTML (HyperText Markup Language), XML (eXtensible Markup Language) and PDF (Portable Document Format) -- there were a number of formats corresponding:

(1) to a given software, for example Glassbook Reader (from Glassbook, later bought by Palm) and Peanut Reader (from Peanut Press, later bought by Adobe), or

(2) to a given device (PDA or e-reader), for example Rocket eBook Reader (for the Rocket eBook), Franklin Reader (for the eBookMan), Cytale software (for the Cybook 1st generation), Gemstar eBook Reader (for the Gemstar eBook) and Palm Reader (for the Palm Pilot). These formats and software couldn't be used on other devices.

In June 1998, the US National Institute of Standards & Technology (NIST) created the Open eBook Initiative with a 25-people task force named Open eBook Authoring Group. The first version of the Open eBook (OeB) format was released in September 1999. It was based on XML (eXtensible Markup Language) and defined by the Open eBook Publication Structure (OeBPS), with a free version belonging to the public domain, and a full version to be used by the publishing industry with or without DRM (Digital Rights Management).

The Open eBook Forum (OeBF) was created in January 2000 as an industrial consortium (with 85 participants in 2002) to develop the OeB format and OeBPS specifications. Since 2000, most ebook formats have derived from the OeB format, for example LIT for the Microsoft Reader and PRC for the Mobipocket Reader.

## # LIT (Microsoft Reader)

In April 2000 Microsoft launched its own PDA, the Pocket PC, with Microsoft Reader to read ebooks in LIT ("LITerature") format, a format based on the OeB format. Microsoft Reader was available for computers in August 2000, and for any Windows platform then, including for the Tablet PC launched in November 2002.

Microsoft was billing publishers and distributors for the use of its DRM technology on the Microsoft Digital Asset Server (DAS), with a commission on each sale. Microsoft partnered with Barnes & Noble.com in January 2000 and with Amazon.com in August 2000, for them to offer ebooks for Microsoft Reader in their new eBookStores. Barnes & Noble.com opened its eBookStore in August 2000, followed by Amazon in November 2000.

Windows CE, the Pocket PC's first OS, was replaced in October 2001 by Pocket PC 2002 to handle the reading of copyrighted ebooks. In 2002, people could read ebooks on Microsoft Reader, Mobipocket Reader and Palm Reader.

## # PRC (Mobipocket Reader)

Thierry Brethes and Nathalie Ting founded the company Mobipocket in March 2000 as a company specialising in ebooks for PDAs. Mobipocket was partly funded by Viventures, a branch of the French multinational Vivendi. Mobipocket Reader could be used on any PDA, and on any computer from April 2002. The format was PRC, based on the OeB format.

In October 2001, Mobipocket Reader received the eBook Technology Award from the International Book Fair in Frankfurt, Germany. Mobipocket Reader was available alongside Franklin Reader in the eBookMan, the multimedia PDA of Franklin.

The Mobipocket Web Companion was a paid software for extracting content from news websites that partnered with Mobipocket. The Mobipocket Publisher was meant for individuals (with a free version for private use, and a standard version for a fee) and for publishers (with a professional version for a fee) to create ebooks using the Mobipocket DRM technology to control access to copyrighted ebooks. The Mobipocket Publisher could also create ebooks in LIT format for Microsoft Reader.

In spring 2003, Mobipocket Reader was available in five languages (French, English, German, Spanish, Italian) and could be used on any PDA, computer and smartphone. 6,000 titles in several languages were available on the eBookStore of Mobipocket and in partner bookstores. Mobipocket (software and ebooks) was bought by Amazon in April 2005. The Kindle was launched two years later.

## # OeB is replaced by EPUB

In April 2005, the Open eBook Forum (OeBF) was replaced by the International Digital Publishing Forum (IDPF), and OeB was replaced by EPUB, an acronym for «Electronic PUBLication». EPUB allowed the reflowing of text depending on the size of the screen. Recent PDF ebooks could be compatible with EPUB. The IDPF released EPUB2 in May

2021 and EPUB3 in October 2011. The IDPF was combined with the World Wide Web Consortium (W3C) in January 2017 to develop EPUB within the W3C.

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## 12. Wikipedia, an encyclopedia for the world

Wikipedia was created in January 2001 by Jimmy Wales and Larry Sanger as a global free collaborative online encyclopedia. Wikipedia quickly became the largest reference website, with thousands of people contributing worldwide. The articles and illustrations (images, pictures, maps, graphs) stay the property of their authors, and can be freely used under a licence Creative Commons BY-SA (Attribution-ShareAlike). Wikipedia inspired other collaborative encyclopedias such as Citizendium and the Encyclopedia of Life.

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### # An exponential growth

Wikipedia is financed by donations, with no advertising. Its website is a wiki, which means that anyone can write, edit, correct and improve information throughout the encyclopedia, with people contributing under a pseudonym. The articles and illustrations (images, pictures, maps, graphs) stay the property of their authors, and can be freely used. The licence was first a licence GFDL (GNU Free Documentation License) and then a licence Creative Commons BY-SA (Attribution-ShareAlike).

Founded in June 2003, the Wikimedia Foundation has offered Wikipedia (created in January 2001), Wiktionary (created in December 2002) and Wikibooks (created in June 2003), followed by Wikiquote (quotations), Wikisource (texts from public domain), Wikimedia Commons (multimedia), Wikispecies (animals and plants), Wikinews and Wikiversity (textbooks).

Wikipedia quickly became the largest reference website, with thousands of people contributing worldwide. In December 2004, Wikipedia had 1.3 million articles written by 13,000 contributors in 100 languages. In December 2006, Wikipedia was among the top ten websites, with 6 million articles. In May 2007, Wikipedia had 7 million articles in 192 languages, including 1.8 million articles in English, 589,000 articles in German, 500,000 articles in French, 260,000 articles in Portuguese, and 236,000 articles in Spanish.

In 2008, Wikipedia was in the top five websites. In September 2010, Wikipedia had 14 million articles in 272 languages, including 3.4 million articles in English, 1.1 million articles in German and 1 million articles in French. Wikipedia celebrated its tenth anniversary in January 2011 with 17 million articles in 270 languages and 400 million individual visits per month for all websites.

Wikipedia inspired other collaborative encyclopedias such as Citizendium and the Encyclopedia of Life.

## # Citizendium

Larry Sanger, co-founder of Wikipedia, founded Citizendium (acronym for "The Citizen's Compendium") in March 2007 as an experimental encyclopedia meant to address the vandalism, policy and content quality issues in Wikipedia, as well as the use of pseudonyms. (Wikipedia addressed its own policy and content quality issues over the years.)

Citizendium is a wiki project open to "public participation with gentle expert guidance". The project is experts-led, not experts-only. Contributors use their own names, and are guided by expert editors. "Editors will be able to make content decisions in their areas of specialisation, but otherwise working shoulder-to-shoulder with ordinary authors." Constables make sure the rules are respected.

There were high-quality 1,100 articles (from 820 authors and 180 editors) in March 2007, 11,800 articles in August 2009, and 15,000 articles in September 2010.

## # The Encyclopedia of Life

The Encyclopedia of Life was launched in May 2007 as a global scientific effort to document all known species of animals and plants. There were 1.8 million known species in 2007, including endangered species, and millions of species yet to be discovered and catalogued.

People would be able to use the encyclopedia as a "macroscope" to identify major trends from a considerable stock of information -- in the same way they use a microscope for the study of detail.

This collaborative effort was led by major institutions (Field Museum of Natural History, Harvard University, Marine Biological Laboratory, Missouri Botanical Garden, Smithsonian Institution, Biodiversity Heritage Library). The initial funding came from the MacArthur Foundation (US\$ 10 million) and the Sloan Foundation (US\$ 2.5 million). A \$100 million funding over ten years would be necessary before self-financing.

The honorary chair was Edward Wilson, professor emeritus at Harvard, who was the first to express the wish for such an encyclopedia in an essay dated 2002. Technology improvements made it possible five years later, with content aggregators, mash-up, large scale wikis, and large scale content management.

In May 2007, when the project was officially launched, 1.25 million pages of books from public domain spanning over 200 years were already digitised in London, Boston and Washington D.C., and available in the Internet Archive.

The Encyclopedia of Life has offered a web page for each species. It provides a single portal for millions of documents (texts, photos, maps, sound, videos) scattered online and offline.

As a teaching and learning tool for a better understanding of our planet, the encyclopedia is available to all (researchers, teachers, students, media, policy makers, general public), who

can contribute in a wiki-style environment, with contributions checked by experts. The English version is translated in several languages by partner organisations.

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## 13. The Creative Commons licence

Founded in 2001, "Creative Commons is a nonprofit corporation dedicated to making it easier for people to share and build upon the work of others, consistent with the rules of copyright. We provide free licenses and other legal tools to mark creative work with the freedom the creator wants it to carry, so others can share, remix, use commercially, or any combination thereof." (excerpt from the website)

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### # Copyleft, GPL and GFDL

Long before Creative Commons, the term "copyleft" was invented in 1984 by Richard Stallman, a computer scientist at MIT (Massachusetts Institute of Technology) who founded the Free Software Foundation (FSF). The first licence was the GPL (General Public License) for computer software.

As explained on its website: "Copyleft is a general method for making a program or other work free, and requiring all modified and extended versions of the program to be free as well. (...) Copyleft says that anyone who redistributes the software, with or without changes, must pass along the freedom to further copy and change it. Copyleft guarantees that every user has freedom. (...) Copyleft is a way of using the copyright on the program."

Created in 2000, the GFDL (GNU Free Documentation License) is "a form of copyleft intended for use on a manual, textbook or other document to assure everyone the effective freedom to copy and redistribute it, with or without modifications, either commercially or non commercially." It was the first licence used by Wikipedia.

### # Creative Commons

Creative Commons (CC) was founded in 2001 by Lawrence "Larry" Lessing, a professor at Stanford Law School, California. "Creative Commons is a nonprofit corporation dedicated to making it easier for people to share and build upon the work of others, consistent with the rules of copyright. We provide free licenses and other legal tools to mark creative work with the freedom the creator wants it to carry, so others can share, remix, use commercially, or any combination thereof." (excerpt from the website)

There are six licences, whose version 4.0 (international) was released in November 2013. Previous versions were version 3.0 (compatible with copyleft and GPL) released in February 2007, version 2.0 released in May 2004, and version 1.0 released in December 2002.

The licence CC BY (Attribution) “lets others distribute, remix, adapt, and build upon your work, even commercially, as long as they credit you for the original creation. This is the most accommodating of licenses offered, recommended for maximum dissemination and use of licensed materials.”

The licence CC BY-SA (Attribution-ShareAlike) “lets others remix, adapt, and build upon your work even for commercial purposes, as long as they credit you and license their new creations under the identical terms. All new works based on yours will carry the same license, so any derivatives will also allow commercial use.”

The licence CC BY-ND (Attribution-NoDerivs) “lets others reuse the work for any purpose, including commercially. However, it cannot be shared with others in adapted form, and credit must be provided to you.”

The licence CC BY-NC (Attribution-NonCommercial) “lets others remix, adapt, and build upon your work non-commercially, and although their new works must also acknowledge you and be non-commercial, they don’t have to licence their derivative works on the same terms.”

The licence CC BY-NC-SA (Attribution-NonCommercial-ShareAlike) “lets others remix, adapt, and build upon your work non-commercially, as long as they credit you and license their new creations under the identical terms.”

The licence CC BY-NC-ND (Attribution-NonCommercial-NoDerivs) is “the most restrictive of our six main licenses, only allowing others to download your works and share them with others as long as they credit you, but they can’t change them in any way or use them commercially.”

The Public Library of Science (PLOS) for example has used a CC BY licence for the articles of its free online scientific and medical journals created from 2003 to 2007 (PLOS Biology, PLOS Medicine, PLOS Genetics, PLOS Computational Biology, PLOS Pathogens, PLOS Neglected Tropical Diseases, PLOS ONE). The articles can be freely redistributed and reused around the world, including for translations.

There were one million Creative Commons licenced works in 2003, 4.7 million works in 2004, 20 million works in 2005, 50 million works in 2006, 90 million works in 2007, 130 million works in 2008, 350 million works in April 2010, 882 million works in 2014, 1.6 billion works in 2020, and 2 billion works in June 2021 for the 20th anniversary of Creative Commons.

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## 14. From Google Print to Google Books

Google created Google Print in May 2005 for publishers and libraries, and stopped it three months later after lawsuits from the Authors Guild and the Association of American Publishers (AAP). Google Books followed in August 2006 with the digitisation of collections from many partner libraries, and with similar lawsuits. Google invoked “fair use” all along to be able to offer free extracts of copyrighted books. Google won the lawsuits in October 2015 after a lengthy ten-year judicial saga.

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### # Google Print

The beta version of Google Print went live in May 2005, after two earlier steps.

In October 2004, Google launched the first part of Google Print as a project aimed at publishers, for users to be able to see excerpts of books, and order the books online.

In December 2004, Google launched the second part of Google Print as a project intended for libraries, to create a digital library of 15 million books by digitising the collections of major partner libraries, beginning with the libraries of the universities of Michigan (7 million books), Harvard, Stanford and Oxford, and the New York Public Library. The planned cost in 2004 was an average of US \$10 per book, and a total budget of \$150 to \$200 million for ten years.

Three months later, Google Print was stopped until further notice because of lawsuits filed by the Authors Guild and the Association of American Publishers (AAP) for copyright infringement.

### # Google Books

The program resumed in August 2006 under the name of Google Books. The participating libraries now included the libraries of the universities of California, Virginia, and Wisconsin-Madison, and the Complutense of Madrid. Google Books provided a full text for public domain books, and excerpts for copyrighted books. According to the media buzz, Google was scanning 3,000 books a day.

In December 2008, Google had 24 library partners, including a Swiss library (University Library of Lausanne), a French library (Lyon Municipal Library), a Belgian library (Ghent University Library), a German library (Bavarian State Library), two Spanish libraries (National Library of Catalonia, and University Complutense of Madrid), and a Japanese library (Keio University Library). The US partner libraries were (by alphabetical order): Columbia

University, Committee on Institutional Cooperation (CIC), Cornell University Library, Harvard University, New York Public Library, Oxford University, Princeton University, Stanford University, University of California, University of Michigan, University of Texas at Austin, University of Virginia, and University of Wisconsin-Madison.

The inclusion of copyrighted works in Google Books has been widely criticised by authors and publishers around the world. In the US, lawsuits were filed by the Authors Guild and the Association of American Publishers (AAP) for alleged copyright infringement. The assumption was that the full scanning and digitising of copyrighted books infringed copyright laws, even if only snippets were made freely available.

Google thought this was "fair use", referring to short excerpts from copyrighted books that could be lawfully quoted in another book or website, as long as the source (author, title, publisher) was mentioned. After a lengthy 10-year battle, Google won the lawsuits in October 2015.

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## 15. The Internet Archive, a library for the world

Founded in April 1996 by Brewster Kahle as an “internet library”, the Internet Archive has stored an archive of the internet every two months for present and future generations. In October 2001, the collection is freely available to all with the Wayback Machine. The Internet Archive also becomes "a nonprofit digital library dedicated to providing universal access to human knowledge" with text, audio, image, video and software content.

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### # An “internet library”

Founded in April 1996 by Brewster Kahle in San Francisco, California, the Internet Archive is a non-profit organisation that has built an "internet library" to offer permanent access to historical collections in digital format for researchers, historians and scholars.

As explained on the website in the late 1990s, throughout history, societies have sought to preserve their culture and heritage for present and future generations, and libraries have been created to preserve the paper trail of that culture and legacy, and to facilitate its access to the general public and researchers. Therefore it seems essential to extend their mission to new technology. Paradoxically this was done poorly in the early 20th century. Many movies were recycled (and thus lost forever) to retrieve the silver layer. Many radio or TV programs were not saved. It seems important not to repeat the same mistakes for the internet, especially for the web, a new medium the extent of which is still unknown in 1996. This is the “raison d’être” of the Internet Archive.

In October 2001, with 30 billion web pages stored every two months since April 1996, the Internet Archive launched the Wayback Machine, users to be able to surf the archive of a given website by date. There were 65 billion pages (from 50 million websites) in 2006, 85 billion pages in 2008, and 150 billion pages in March 2010.

### # A digital library

The Internet Archive also became a digital library of text, audio, image, video and software content, for example some books of the Million Book Project (10,520 books in April 2005), films for the period 1903-1973, live concerts, sites about 11 September 2001, sites about US elections in 2000 (presidential) and 2002 (Congress), sites about web pioneers, and more, with all collections freely available on the web.



As a side remark, the Million Book Project (also named Universal Library or Universal Digital Library), was launched in January 2000 by the Carnegie Mellon University in Pennsylvania with the aim to digitise one million books in a number of languages, including in libraries located in India and China. The project was completed in 2007, with one million books available on the university website as image files in DjVu and TIFF formats, and three mirror sites (India, Northern China, Southern China).

## # The Open Content Alliance (OCA)

As explained in 2007 on its website, the Open Content Alliance (OCA) is "a collaborative effort of a group of cultural, technology, nonprofit, and governmental organisations from around the world that helps build a permanent archive of multilingual digitised text and multimedia material. An archive of contributed material is available on the Internet Archive website and through Yahoo! and other search engines and sites. The OCA encourages access to and reuse of collections in the archive, while respecting the content owners and contributors."

Unlike Google Books, the books will be searchable and downloadable with any web search engine, and don't include copyrighted books, unless the copyright holder has expressly given permission. The first contributors were the University of California, the University of Toronto, the European Archive, the National Archives in United Kingdom, O'Reilly Media, and the Prelinger Archives.

The first 100,000 ebooks were available in the Internet Archive in December 2006, with 12,000 new ebooks posted per month. There were one million books in December 2008, and two million books in March 2010.

In May 2008, Microsoft ended its own Live Search Books program (started in December 2006 with partner libraries and publishers) and transferred the 750,000 digitised books into the Internet Archive collection.

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## 16. eBooks seen by some pioneers

I conducted many interviews by email for twenty years for my research project on ebooks around the world -- a project intended for my colleagues and for the general public. Here are a few quotes by Michael Hart (Project Gutenberg), John Mark Ockerbloom (The Online Book Page), Robert Beard (A Web of Online Dictionaries), Jean-Paul (Cotres.net), Nicolas Pewny (Le Choucas), Marc Autret (Indiscripts), Pierre Schweitzer (@folio), Denis Zwirn (Numilog), and Henri "Henk" Slettenhaar (Silicon Valley Association).

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### # Michael Hart (Project Gutenberg)

"We consider etext to be a new medium, with no real relationship to paper, other than presenting the same material, but I don't see how paper can possibly compete once people each find their own comfortable way to etexts, especially in schools." (Michael Hart, founder of Project Gutenberg and inventor of ebooks, interviewed in August 1998)

### # John Mark Ockerbloom (The Online Book Page)

"I've gotten very interested in the great potential the net has had for making literature available to a wide audience. (...) I am very excited about the potential of the internet as a mass communication medium in the coming years. I'd also like to stay involved, one way or another, in making books available to a wide audience for free via the net, whether I make this explicitly part of my professional career, or whether I just do it as a spare-time volunteer." (John Mark Ockerbloom, digital librarian and founder of The Online Books Page, interviewed in September 1998)

### # Robert Beard (A Web of Online Dictionaries)

"As a language teacher, the web represents a plethora of new resources produced by the target culture, new tools for delivering lessons and testing, which are available to students any time they have the time or interest -- 24 hours a day, 7 days a week. It is also an almost limitless publication outlet for my colleagues and I, not to mention my institution. (...) Ultimately all course materials, including lecture notes, exercises, moot and credit testing, grading, and interactive exercises will be far more effective in conveying concepts that we have not even dreamed of yet. The web will be an encyclopedia of the world by the world for the world." (Robert Beard, professor and founder of A Web of Online Dictionaries and yourDictionary.com, interviewed in October 1998)

## # Jean-Paul (Cotres.net)

"Surfing the web is like radiating in all directions (I am interested in something and I click on all the links of a home page) or like jumping around (from one click to another, as the links appear). You can do this in the written media, of course. But the difference is striking. So the internet changed how I write. (...) I have finally found in online publishing the mobility and fluidity I was seeking." (Jean-Paul, hypermedia author and creator of Cotres.net, interviewed in June 2000)

## # Nicolas Pewny (Le Choucas)

"I see the ebook of the future as a 'full work' putting together text, sound, images, video and interactivity: a new way to design, and write, and read, perhaps on a single book, constantly renewed, which would contain everything we have read, a single and multiple companion. Utopian? Improbable? Maybe not that much!" (Nicolas Pewny, founder of Editions du Choucas and consultant in digital publishing, interviewed in February 2003)

## # Marc Autret (Indiscripts)

"There are at least two emerging trends for ebooks: (a) an increasingly attractive and functional interface for reading (browsing, searching, restructuring on the fly, user annotations, interactive quiz); (b) a multimedia integration (video, sound, animated graphics, database) now strongly paired with the web. No physical book offers such features. So I imagine the ebook of the future as a kind of wiki crystallised and packaged in a given format. How valuable will it be? Its value will be that of a book: the unity and quality of editorial work!" (Marc Autret, developer, graphic designer and creator of the website Indiscripts, interviewed in December 2006)

## # Pierre Schweitzer (@folio)

"The luck we all have is to live this fantastic change here and now. When I was born in 1963, a computer memory could only hold a few pages of characters. Today, my music player can hold billions of pages, a true local library. Tomorrow, by the combined effect of the Moore Law and the ubiquity of networks, we will have instant access to works and knowledge. We won't be much interested any more on which device to store information. We will be interested in handy functionalities and beautiful objects." (Pierre Schweitzer, designer of the e-reader @folio and the software Mot@Mot, interviewed in January 2007)

## # Denis Zwirn (Numilog)

"The ebook is not a topic for symposiums, conceptual definitions, or divination by some 'experts' any more. It is a commercial product and a tool for reading. (...) We need to offer books that can be easily read on any available electronic device, gradually with an electronic ink display. And to offer them as an industry. The ebook is not, and will never be, a niche product (dictionaries, travel guides, books for the blind). It is becoming a mass market

product, with multiple forms, like the traditional book." (Denis Zwirn, founder of the digital bookstore Numilog, interviewed in August 2007)

## # Henri "Henk" Slettenhaar (Silicon Valley Association)

"I never liked reading a book on a computer or a PDA. Now, with tablets such as the Kindle or the iPad, I am finally reading ebooks. I see a huge expansion of digital reading with tablets that are easy to use and with a very large choice of ebooks thanks to e-commerce companies like Amazon. (...) I also use online books to learn the art of innovation!" (Henk Slettenhaar, professor in communication technology and founder of the Swiss Silicon Valley Association, interviewed in June 2011)

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## 17. A tribute to librarians around the world

What would we do without librarians? Both traditional and digital libraries are extensively covered by the media, but what about all the librarians who have worked there, especially librarians in small or underfunded libraries? Librarians have heartily embraced ebooks alongside printed books despite a workload that is heavier by the day. The author was a librarian before being a translator.

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The library has always stuck to its time, so it has changed over the years. The contemporary library, often renamed multimedia library, now includes an exhibition hall, a conference hall (used for meetings, debates, book signatures, concerts, and even yoga or tai chi), a cosy room where children can listen to stories, a cyberspace with computers and a virtual library.

And, in the best of cases, a coffee shop rather than a beverage machine stacked under the stairs.

Librarians have proudly rounded the cape of the 21st century trying to read ebooks on their computers, PDAs, smartphones, e-readers and tablets, with more or less conviction at first, just to be in the game, before enthusiastically advocating for them.

Despite their young age, ebooks have created a tsunami in a five-century economic model that had started with Johannes Gutenberg. Was the book family going to implode because of its digital offspring? No. Librarians were there, and cemented the book world by gathering around them many other trades: authors, editors, translators, illustrators, photographers, designers, publishers, booksellers, distributors, and of course readers.

“What is important is the author’s work, and it can be available as both a printed book and an ebook”, librarians were repeating over and over. “Love is looking in the same direction.”

All trades now peacefully attend book fairs. eBooks are on good terms with printed books. Paper is not dead yet, but tablets and e-readers are looking forward to the future, i.e. taking the whole space as soon as they can.

In the meantime, librarians are busier than ever. In addition to their regular duties (buy, inventory, catalogue, classify and loan documents), they also answer all kinds of questions every day, while updating their professional blogs and wikis, and feeding the many library accounts on social sites, including the library’s Facebook wall, the library’s Twitter feed, the library’s Instagram account, and the requests on WhatsApp.

Some would go nuts doing so many things at once. But librarians have quickly learned to manage their stress levels, while working hard within their union to get better wages for them and their colleagues, and for a relaxation area to be mandatory in all libraries.

During restless nights, non-techie librarians are dreaming of the past, when the internet had not invaded the world yet. Meanwhile, techie librarians are dreaming of the (true) electronic paper, still in beta test, but expected to rock the planet sooner or later, despite a worldwide launch postponed year after year.

As we live in a busy world, it is now time to conclude.

Librarians were already there to bring order to what Gutenberg and his successors imprinted. Librarians were there to organise the first city libraries, and to tirelessly promote public reading to generations of young and old readers.

Librarians are still there to deal with stacks of books, ebooks, newspapers, magazines, journals, images, photos, films, diskettes, CDs, CD-ROMs, DVDs, web pages, text files, audio files and video files, while checking the library's emails, and responding to comments pouring in under their latest blog post, their latest Facebook post or their latest tweet.

Given so many documents and so many formats, the task has become more and more challenging every day. But librarians have been there for five centuries, and they will still be there for a long time to come.

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## 18. A timeline from 1971 until now

This timeline covers free ebooks, commercial ebooks, digital libraries, online bookstores, online publishers, digital formats, reading software, PDAs, smartphones, e-readers, tablets, dictionaries, encyclopedias, novel projects, and more.

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[year-month]

1971-07 > After typing eText #1 on 4 July 1971, Michael Hart sends a message to the 100 users of the pre-internet. Six users retrieve the file. Project Gutenberg is born.

1974 > Vinton Cerf and Robert Kahn invent the communication protocols of the internet.

1983 > The internet starts its progression worldwide.

1984 > Richard Stallman conceives the copyleft to ensure that a copyrighted software can be freely used and improved.

1991 > Tim Berners-Lee invents the World Wide Web and gives his invention to the world.

1993 > John Mark Ockerbloom creates The Online Books Page to facilitate access to books that are available for free on the internet.

1993-06 > Adobe launches PDF (Portable Document Format) as well as Acrobat Reader (to view PDFs) and Adobe Acrobat (to create PDFs).

1994-02: The Helsinki Public Library in Finland is the first library to launch a website.

1995 > Researchers at PARC (Palo Alto Research Center, Xerox) develop an electronic ink technology called Gyricon.

1995-09 > A few European national libraries create a common website named Gabriel.

1996-03 > The Palm Pilot is the first PDA (Personal Digital Assistant).

1996-04 > Brewster Kahle founds the Internet Archive to archive the internet for present and future generations.

1997 > Hachette launches the Dictionnaire Universel Francophone (French-language Universal Dictionary), a free online dictionary.

1997 > The National Library of France (Bibliothèque Nationale de France – BNF) creates its digital library Gallica with 3,000 digitised books from the 19th century.

1997-01 > Gabriel is revamped to become a trilingual portal for European national libraries.

1997-04 > Researchers from the MIT MediaLab create the company E Ink to develop an electronic ink technology.

1997-04 > There are one million websites worldwide.

1997-05 > The US bookstore chain Barnes & Noble creates its eBookStore.

1997-12 > There are 70 million internet users (1.7% of the world population).

1998 > The Rocket eBook is the first e-reader of the market, launched by NuvoMedia. It can hold ten books.

1998 > The SoftBook Reader is the second e-reader of the market, launched by SoftBook Press.

1998-06 > The Open eBook Initiative is created to work on a standard format named Open eBook (OeB).

1999 > Michael Kellogg creates WordReference.com to offer free bilingual language dictionaries as well as other linguistic tools and discussion forums for linguists.

1999-09 > The Open eBook (OeB) is published as a standard format for ebooks.

1999-12 > The Encyclopaedia Britannica creates its online version Britannica.com, available for free and then for a fee.

1999-12 > The Encyclopaedia Universalis (the French version of the Encyclopaedia Britannica) creates its online version, with a paid subscription and some articles available for free.

2000-01 > Gemstar buys NuvoMedia (Rocket eBook) and SoftBook Press (SoftBook Reader), and launches its own e-reader, the Gemstar eBook, the following year.

2000-01 > The Open eBook Forum (OeBF) is founded to promote the OeB (Open eBook) format as a standard for ebooks.

2000-03 > The Oxford University Press (OUP) publishes the online version of the Oxford English Dictionary (OED), with a paid subscription.



2000-03 > Thierry Brethes and Nathalie Ting create Mobipocket, a company specialising in ebooks for PDAs, with Mobipocket Reader as a software for any PDA.

2000-03 > There are 300 million internet users (5% of the world population).

2000-04 > Microsoft launches its own PDA, the Pocket PC, with Microsoft Reader as a software to read ebooks.

2000-07 > 50% of internet users don't have English as a mother tongue.

2000-07: >Stephen King is the first best-selling author to self-publish his novel "The Plant" chapter by chapter on a dedicated website.

2000-08 > Barnes & Noble.com opens its eBookStore.

2000-09 > The GDT (Grand Dictionnaire Terminologique – Large Terminology Dictionary) from Quebec is a free bilingual (French, English) online dictionary.

2000-10 > Charles Franks creates Distributed Proofreaders to share the proofreading of public domain books between many volunteers before including these books into Project Gutenberg.

2000-10: Franklin launches the eBookMan, its own multimedia PDA.

2000-11 > Arturo Pérez-Reverte, a Spanish novelist, sells his new novel "El Oro del Rey" ("The Gold of the King") as an ebook during one month before selling it as a printed book.

2000-11: Frederick Forsyth, an English author of thrillers, publishes a new short story online with the help of Online Originals.

2000-11 > The Nokia 9210 is the first smartphone.

2000-12 > Amazon opens its eBookStore.

2000-12 > Researchers from PARC (Palo Alto Research Center) create the company Gyricon Media to develop their own electronic ink technology.

2001 > Lawrence "Larry" Lessig conceives the Creative Commons licence for copyrighted authors and other creators to be able to share their work on the internet. The first licences are published the following year.

2001-01 > Jimmy Wales and Larry Sanger create Wikipedia as a main free collaborative online encyclopedia.

2001-01 > The Cybook is the first European e-reader, launched by Cytale before being developed and marketed by Bookeen two years later.

2001-03 > People can read ebooks on the Palm Reader (for the Palm Pilot) or the Mobipocket Reader (for any PDA).

2001-04 > There are 17 million PDAs and only 100,000 e-readers worldwide, according to a Seybold Report.

2001-09 > Yahoo! creates its eBookStore.

2001-10 > With 30 billion archived web pages, the Internet Archive launches the Wayback Machine to see a website or a web page at various times since 1996.

2002-03 > The Oxford University Press (OUP) launches Oxford Reference Online (ORO) as a major online encyclopedia intended for the web, with a paid subscription.

2002-07 > The company E Ink shows the prototype of its E Ink screen for e-readers. The first E Ink screen is marketed two years later.

2002-12 > Creative Commons publishes its first licenses, for copyrighted authors to be able to share their work on the internet, and for creators to be able to copy and remix it.

2003-03 > Paulo Coelho offers free PDF versions of some of his best-sellers worldwide.

2003-12 > Adobe opens its own digital library, the Digital Media Store.

2003-12 > One million works use a Creative Commons licence.

2004-01 > The European Commission creates the European Library to replace Gabriel as the web portal for European national libraries.

2004-04 > Sony markets its first e-reader, the LIBRIe, in Japan. The LIBRIe is also the first e-reader with an E Ink screen instead of a LCD screen.

2004-10 > Google launches Google Print for publishers and libraries. It is replaced by Google Books one year later.

2005-04 > The International Digital Publishing Forum (IDPF) replaces the Open eBook Forum to develop a standard format for ebooks.

2005-10 > The Internet Archive creates the Open Content Alliance (OCA) to offer a global public digital library with the help of several institutional partners.

2005-10 > O'Reilly Media offers digital editions of its printed books on its website. These books have a Creative Commons licence.

2005-12 > There are one billion internet users (15.7% of the world population).

2006 > There are 90 million smartphones and one billion mobile phones worldwide.

2006-08 > Google creates Google Books to replace Google Print.

2006-10 > Sony launches the Sony Reader, its second e-reader after the LIBRIe in Japan. Both readers have an E Ink screen.

2006-11 > There are 100 million websites worldwide.

2007-02 > Creative Commons publishes the versions 3.0 of its licences, with an international licence and compatibility with similar licenses (copyleft, GPL and others).

2007-03 > Larry Sanger creates Citizendium as a free collaborative online encyclopedia whose content is checked by experts.

2007-05 > The Encyclopedia of Life is a free collaborative online encyclopedia to document all known species of animals and plants.

2007-06 > Apple launches its own smartphone, the iPhone.

2007-09 > The International Digital Publishing Forum (IDPF) publishes the EPUB format to replace the OeB (Open eBook) format.

2007-11 > Amazon launches the Kindle, its own e-reader.

2008-07 > The PDF format is released as an open standard, and published by ISO (International Organization for Standardization) as ISO 32000-1:2008.

2008-11 > The European Commission creates Europeana as the European public digital library.

2009-02 > Google Books creates a dedicated portal for ebooks for smartphones.

2009-05 > Amazon launches the Kindle DX with a larger screen for newspapers and magazines.

2009-05 > Marc Autret, a developer and graphic designer, creates the bilingual French-English website Indiscripts, which stands for "InDesign Scripting Playground".

2009-11 > Barnes & Noble.com launches its own e-reader, the Nook.

2010-04 > Apple launches its own tablet, the iPad.

2010-05 > The International Digital Publishing Forum (IDPF) releases EPUB2.

2010-12 > 400 million works use a Creative Commons licence.

2011-01 > Wikipedia celebrates its tenth anniversary with 17 million articles in 270 languages.

2011-03 > There are 2 billion internet users (30.2% of the world population).

2011-07 > Project Gutenberg celebrates its 40th anniversary with a collection of 36,000 ebooks.

2011-09 > Michael Hart, founder of Project Gutenberg and inventor of ebooks, dies in Illinois after dedicating his whole life to his project.

2011-10 > The International Digital Publishing Forum (IDPF) releases EPUB3.

2013-11 > Creative Commons publishes the versions 4.0 of its licences.

2014-12 > 882 million works use a Creative Commons licence.

2015-03 > There are 3 billion internet users (42.3% of the world population).

2015-04 > The Online Books Page gives access to two million free books on the internet.

2015-07 > Distributed Proofreaders has digitised and proofread 30,000 ebooks for Project Gutenberg.

2015-09 > Project Gutenberg releases eBook #50,000, "John Gutenberg, First Master Printer", by Franz von Dingelstedt.

2017-01 > The International Digital Publishing Forum (IDPF) is combined with the World Wide Web Consortium (W3C) to develop the EPUB format.

2020-10 > Distributed Proofreaders celebrates its 20th anniversary with around 40,000 books digitised for Project Gutenberg.

2015-03 > There are 4.6 billion internet users (59.5% of the world population).

2021-01 > Wikipedia celebrates its 20th anniversary, and is widely recognised as a reference encyclopedia.

2021-06 > Creative Commons celebrates its 20th anniversary with 2 billion works using a Creative Commons licence.

2021-07 > Project Gutenberg celebrates its 50th anniversary on 4 July 2021 with more than 65,000 ebooks in more than 60 languages, and tens of thousands of downloads very day.

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